

*What Every Member of the  
Trade Community Should Know About:*

# Distinguishing Bolts from Screws



AN INFORMED COMPLIANCE PUBLICATION

MARCH 2006

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**U.S. CUSTOMS and BORDER PROTECTION**

**NOTICE:**

This publication is intended to provide guidance and information to the trade community. It reflects the position on or interpretation of the applicable laws or regulations by U.S. Customs and Border Protection (CBP) as of the date of publication, which is shown on the front cover. It does not in any way replace or supersede those laws or regulations. Only the latest official version of the laws or regulations is authoritative.

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**PRINTING NOTE:**

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## PREFACE

On December 8, 1993, Title VI of the North American Free Trade Agreement Implementation Act (Pub. L. 103-182, 107 Stat. 2057), also known as the Customs Modernization or “Mod” Act, became effective. These provisions amended many sections of the Tariff Act of 1930 and related laws.

Two new concepts that emerge from the Mod Act are “***informed compliance***” and “***shared responsibility***,” which are premised on the idea that in order to maximize voluntary compliance with laws and regulations of U.S. Customs and Border Protection, the trade community needs to be clearly and completely informed of its legal obligations. Accordingly, the Mod Act imposes a greater obligation on CBP to provide the public with improved information concerning the trade community’s rights and responsibilities under customs regulations and related laws. In addition, both the trade and U.S. Customs and Border Protection share responsibility for carrying out these requirements. For example, under Section 484 of the Tariff Act, as amended (19 U.S.C. 1484), the importer of record is responsible for using reasonable care to enter, classify and determine the value of imported merchandise and to provide any other information necessary to enable U.S. Customs and Border Protection to properly assess duties, collect accurate statistics, and determine whether other applicable legal requirements, if any, have been met. CBP is then responsible for fixing the final classification and value of the merchandise. An importer of record’s failure to exercise reasonable care could delay release of the merchandise and, in some cases, could result in the imposition of penalties.

The Office of Regulations and Rulings (ORR) has been given a major role in meeting the informed compliance responsibilities of U.S. Customs and Border Protection. In order to provide information to the public, CBP has issued a series of informed compliance publications, and videos, on new or revised requirements, regulations or procedures, and a variety of classification and valuation issues.

This publication, prepared by the National Commodity Specialist Division, ORR, is a study of the classification of steel screws and bolts. “Distinguishing Bolts from Screws” provides guidance regarding the classification of imported merchandise. We sincerely hope that this material, together with seminars and increased access to rulings of U.S. Customs and Border Protection, will help the trade community to improve voluntary compliance with customs laws and to understand the relevant administrative processes.

The material in this publication is provided for general information purposes only. Because many complicated factors can be involved in customs issues, an importer may wish to obtain a ruling under Regulations of U.S. Customs and Border Protection, 19 C.F.R. Part 177, or to obtain advice from an expert who specializes in customs matters, for example, a licensed customs broker, attorney or consultant.

Comments and suggestions are welcomed and should be addressed to the Assistant Commissioner at the Office of Regulations and Rulings, U.S. Customs and Border Protection, 1300 Pennsylvania Avenue, (Mint Annex) NW, Washington, D.C. 20229.

Michael T. Schmitz,  
Assistant Commissioner  
Office of Regulations and Rulings

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## I. INTRODUCTION

STEEL SCREWS AND BOLTS are classified in Chapter 73, Harmonized Tariff Schedule of the United States (HTSUS) under heading 7318. The tariff has separate provisions for the different types of screws and bolts, and separate provisions for threaded and non-threaded fasteners. The tariff pages covering the various types of steel screws and bolts can be found by checking the latest version of the HTSUS at [www.usitc.gov](http://www.usitc.gov).

U.S. Customs and Border Protection uses fastener industry standards to distinguish bolts from screws. When a fastener is described in a fastener industry dimensional standard as either a screw or a bolt, we follow that standard. When we have no dimensional standard, we go to "*Specification for Identification of Bolts and Screws*," ANSI - ASME B18.2.1 1981 (the "*specification*"). In Rocknel Fastener, Inc. v. United States, Slip Op. 00-112 (Ct. Int'l Trade, decided August 29, 2000), the court sanctioned ANSI/ASME Standard B18.2.1 as "provid[ing] a well-recognized, comprehensive basis for the common and commercial meaning of bolt and screw as understood by the fastener industry in the United States." The standard is full of industry jargon, so to make it easier to use, we have combined it here with illustrations and glossary terms from *Fastener Standards* 6th Edition, Industrial Fasteners Institute, Cleveland, Ohio 44114, 1988. (This informed compliance publication is not meant to substitute for the book. Rather, it is intended to acquaint you with some of the book's contents.)

Here are a couple of helpful hints for applying the *Specification*. The *Specification* includes both primary and supplementary criteria. The primary criteria are easy enough to understand, but in applying the supplementary criteria a few things should be kept in mind.

**FIRST**, the supplementary criteria help you distinguish coarser (or loose tolerance) bolts from finer (or close tolerance) screws. When the supplementary criteria are applied, the coarser product usually turns out to be a bolt, the finer product usually turns out to be a screw. ("coarse" and "fine" are looked at from nine different aspects of the screw). In some industries, e.g., automotive, aircraft, and aerospace, the tolerances are almost always close, so it's not often necessary to spend a lot of time on supplementary criteria when the fastener is from one of these industries; that is, if it doesn't meet the primary criteria (and of course, if it doesn't conform to a fastener industry standard for a bolt), then it probably is a screw.

**SECOND**, when applying the supplementary criteria try to avoid applying the criteria to a sample fastener. It is more effective to compare drawings to drawings. That is, if you can get a hold of the specification drawing to which the fastener was made, take that drawing and compare it to the drawing of an industry standard fastener. Compare the specification to an industry standard in order to see if a given tolerance is fine like a screw, or coarse like a bolt.

**FINALLY**, keep in mind that all of these rules are subordinate to Customs rulings and court decisions.

## **II. SPECIFICATIONS**

The following is reproduced from *Specification for Identification of Bolts and Screws*, ANSI-ASME B18.2.1 1981, with illustrations from *Fastener Standards, 6th Edition*, Industrial Fasteners Institute, Cleveland, Ohio.

### **1. SCOPE**

This specification establishes a recommended procedure for determining the identity of an externally threaded fastener as a bolt or as a screw.

### **2. DEFINITIONS**

#### **2.1 Bolt**

A bolt is an externally threaded fastener designed for insertion through the holes in assembled parts, and is normally intended to be tightened or released by torquing a nut.

#### **2.2 Screw**

A screw is an externally threaded fastener capable of being inserted into holes in assembled parts, of mating with a preformed internal thread or forming its own thread, and of being tightened or released by torquing the head.

### **3. EXPLANATORY DATA**

A bolt is designed for assembly with a nut. A screw has features in its design which makes it capable of being used in a tapped or other preformed hole in the work. Because of basic design, it is possible to use certain types of screws in combination with a nut. Any externally threaded fastener which has a majority of the design characteristics which assist its proper use in a tapped or other preformed hole is a screw, regardless of how it is used in its service application.

### **4. PROCEDURE**

To identify an externally threaded fastener as a bolt or as a screw, two sets of criteria - Primary and Supplementary - shall be applied. The Primary Criteria (5.1 thru 5.4) shall be applied first. Any fastener which satisfies one of the Primary Criteria shall be identified accordingly, and no further examination need be made. The Supplementary Criteria (6.1 through 6.9, and not listed in order of importance or priority

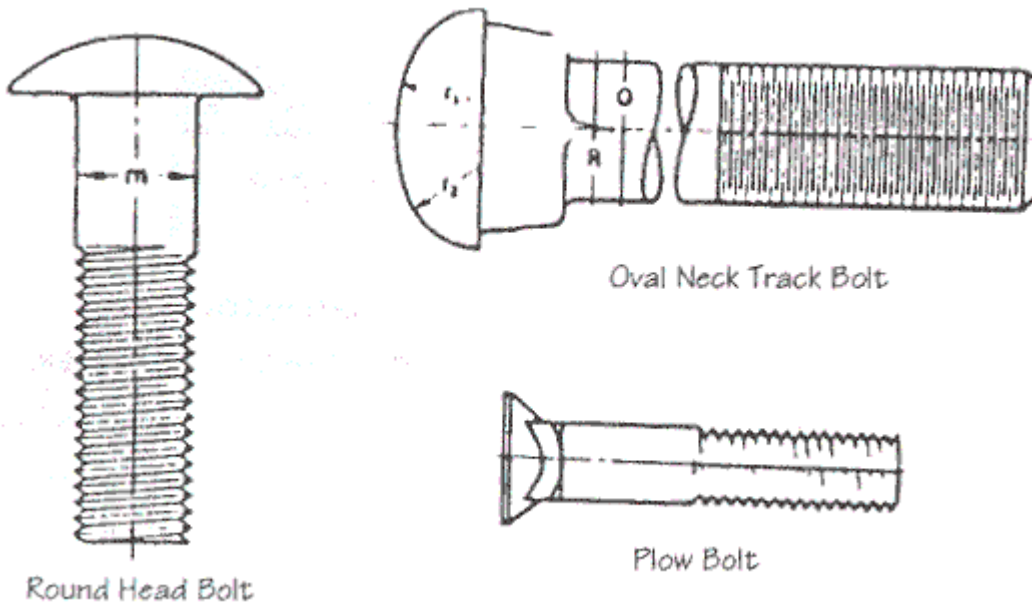


of application) shall be applied to a fastener which does not satisfy completely any one of the Primary Criteria. The Supplementary Criteria detail the principal features in the design of an externally threaded fastener which contribute to its proper use as a screw. A fastener having a majority of these characteristics shall be identified as a screw.

## 5. PRIMARY CRITERIA

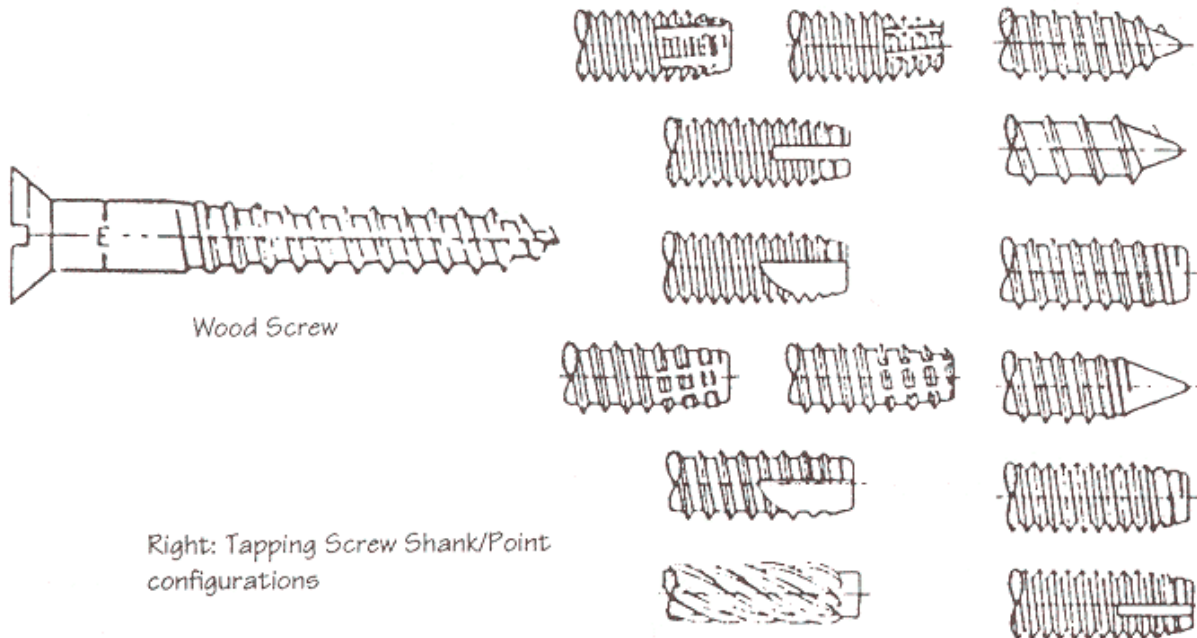
**5.1** An externally threaded fastener, which because of head design or other feature, is prevented from being turned during assembly, and which can be tightened or released only by torquing a nut, is a bolt. (Example: round head bolts, track bolts, plow bolts).

### EXAMPLES:



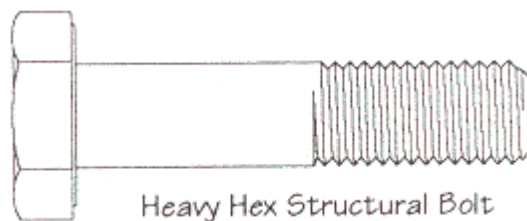
**5.2** An externally threaded fastener, which has a thread form which prohibits assembly with a nut having a straight thread of multiple pitch length, is a screw. (Example: wood screws, tapping screws).

EXAMPLES:



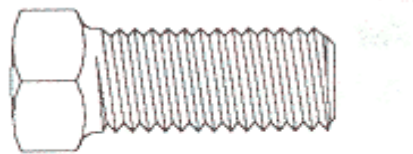
**5.3** An externally threaded fastener, which must be assembled with a nut to perform its intended service, is a bolt. (Example: heavy hex structural bolt).

EXAMPLE



**5.4** An externally threaded fastener, which must be torqued by its head into a tapped or other preformed hole to perform its intended service is a screw. (Example square head set screw).

EXAMPLE:



Square Head Set Screw

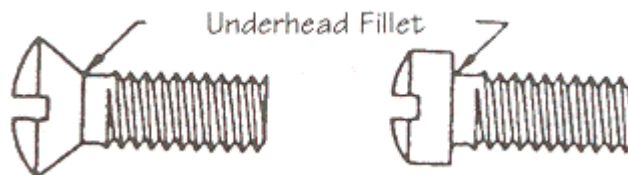
## 6. SUPPLEMENTARY CRITERIA

### 6.1 Under Head Fillet

A screw should have a controlled fillet at the junction of the head with the body. Because of the severe combined torsion and tension stresses at this junction when torquing the head, the minimum limits of the fillet radius should be specified. Because the screw must be capable of being turned through a minimum clearance hole and into an immovable tapped hole, the maximum limits of the fillet radius should be specified to assure solid seating of the head, and to prevent interference at the top of the hole with the junction of head to body.

EXAMPLE:

Underhead Fillet. An underhead fillet is the concave junction at the head and the shank intersection of a headed fastener.

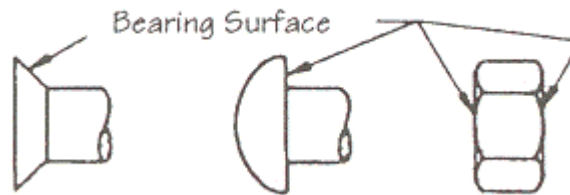


## 6.2 Bearing Surface

The under head bearing surface of a screw should be smooth and flat to minimize frictional resistance during tightening, to prevent scoring of the surface against which the head is turned, and to produce uniform clamping loads.

### EXAMPLE:

**Bearing Surface.** The bearing surface is the supporting or locating surface of a fastener with respect to the part which it fastens (mates). The loading of a fastener is usually through the bearing surface.

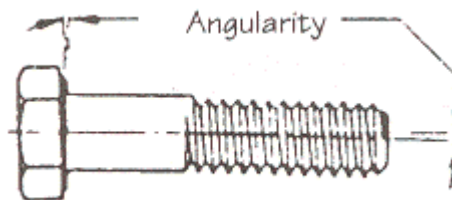


## 6.3 Head Angularity

The angularity (squareness) of the underhead bearing surface with the shank of a screw should be controlled to minimize eccentric loading in the screw or assembled parts, and to assure complete seating and uniform underhead bearing pressure.

### EXAMPLE:

**Angularity.** Angularity is the angle between the axes of two surfaces of a fastener.

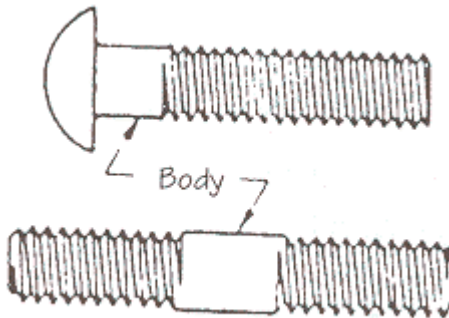


## 6.4 Body

The body of a screw should be closely controlled in accuracy of size and roundness. To fit effectively through a minimum clearance hole, the body diameter must have close tolerances, preferably unilateral on the minus side.

### EXAMPLE:

Body. The body of a threaded fastener is the unthreaded portion of the shank.



## 6.5 Shank Straightness

The shank of a screw should be particularly straight to permit ready engagement with the internal thread, to prevent eccentric loading in the fastener or in the assembled parts, and to minimize interference with the walls of a minimum clearance hole.

### EXAMPLE:

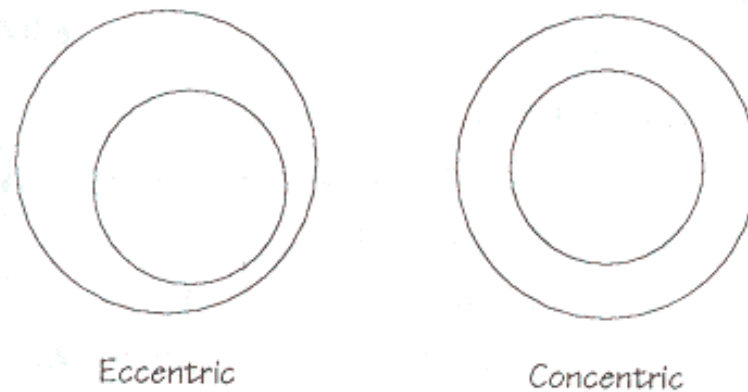
Bow or Camber. Bow or camber is the amount that a side of a surface of a fastener deviates from being straight.



## 6.6 Thread Concentricity

The threads of a screw should be concentric with the body axis within close limits to permit assembly into a tapped hole (which usually has a length of thread engagement longer than a nut) without binding of the body against the walls of a minimum clearance hole.

### EXAMPLE:



## 6.7 Thread length

The length of thread on a screw must be sufficient to develop the full strength of the fastener in tapped holes in various materials.

### DEFINITION:

“Length of complete thread” is defined in *Fastener Standards* 6th Edition as: the axial length of a thread section having full form at both crest and root but also including a maximum of two pitches at the start of the thread which may have a chamfer or incomplete crests.

## 6.8 Point

A screw should have a chamfered, or other specially prepared point at its end to facilitate entry into the hole and easy start with the internal thread, which may be distant from the top of the hole. The point also protects the first thread, which, if damaged, may gall or scar the internal thread throughout its entire length.

### EXAMPLE:

Point. The point of a fastener is the configuration of the end of the shank of a headed fastener or of each end of a headless fastener.

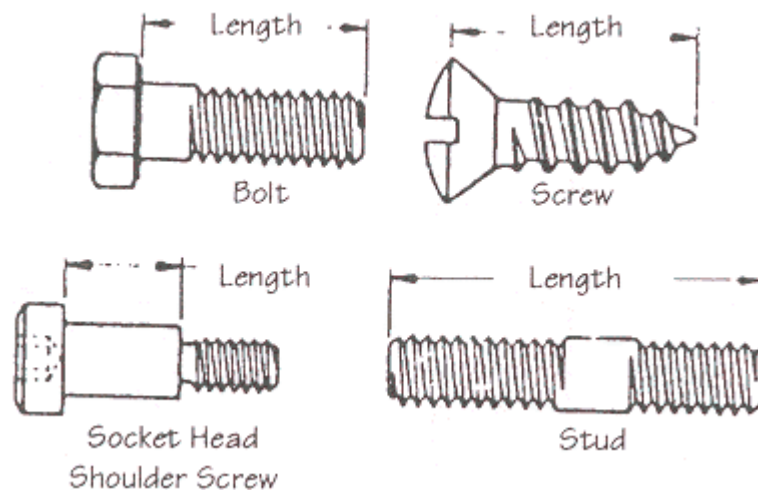


## 6.9 Length

The length of a screw should be closely toleranced with variance preferably unilateral on the minus side to prevent bottoming of the fastener in a tapped hole.

### EXAMPLE:

Length. The length of a headed fastener is the distance from the intersection of the largest diameter of the head with the bearing surface to the extreme point, measured in a line parallel to the axis of the fastener. Exceptions: The length of a shoulder screw and a socket head shoulder screw is the length of the shoulder. The length of a headless fastener is the distance from one extreme point to the other, measured in a line parallel to the axis of the fastener.



### III. INVOICING

The accuracy of the information contained on invoices is an essential element of the structure of the many new and creative programs Customs has undertaken. These programs, including, but not limited to automated entry processing, may only provide their benefits to the trade community as a whole if the data gathered are correct and complete. This concern for invoice accuracy is not new, but as we progress in automation, accuracy becomes indispensable.

Section 141.86 of the Customs Regulations concerns invoicing requirements. Subparagraph (a)(3) of the section specifically requires invoices have the following information:

“A detailed description of the merchandise, including the name by which each item is known, the grade or quality, and the marks, numbers and symbols under which sold by the seller or manufacturer to the trade in the country of exportation, together with the marks and numbers of the packages in which the merchandise is packed.”

A “detailed description” is one which enables an import specialist to properly fix the classification of imported merchandise. Accordingly, the invoice description must indicate any information which has a direct bearing on the proper classification of the imported item and it is incumbent upon the importer of record to ensure that the detailed description is present on each invoice.

Importers do not have to provide information that is not necessary to classify a specific item. However, they are responsible for giving U.S. Customs and Border Protection the information that is needed.

Invoice guidelines for the importation of bolts and screws should include the following:

#### **Industry Standards:**

List all industry standards to which the fastener is made to conform.

#### **Description:**

If the industry standard includes a prescribed method of designation, use that method. In all cases, include: all dimensions, number of threads per inch, product name, head type, point type and component material.



**Component Material:**

State the name of the material (which predominates by weight), e.g., steel, stainless steel, nickel, titanium, copper, etc. For fasteners of high nickel alloy; state percentage by weight of: iron, nickel and chromium.

**Grade:**

State the fastener grade, and identify the grading system.

## **ADDITIONAL INFORMATION**

### **The Internet**

The home page of U.S. Customs and Border Protection on the Internet's World Wide Web, provides the trade community with current, relevant information regarding CBP operations and items of special interest. The site posts information -- which includes proposed regulations, news releases, publications and notices, etc. -- that can be searched, read on-line, printed or downloaded to your personal computer. The web site was established as a trade-friendly mechanism to assist the importing and exporting community. The web site also links to the home pages of many other agencies whose importing or exporting regulations that U.S. Customs and Border Protection helps to enforce. The web site also contains a wealth of information of interest to a broader public than the trade community. For instance, on June 20, 2001, CBP launched the "Know Before You Go" publication and traveler awareness campaign designed to help educate international travelers.

The web address of U.S. Customs and Border Protection is <http://www.cbp.gov>

### **Customs Regulations**

The current edition of *Customs Regulations of the United States* is a loose-leaf, subscription publication available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; telephone (202) 512-1800. A bound, 2003 edition of Title 19, *Code of Federal Regulations*, which incorporates all changes to the Regulations as of April 1, 2003, is also available for sale from the same address. All proposed and final regulations are published in the *Federal Register*, which is published daily by the Office of the Federal Register, National Archives and Records Administration, and distributed by the Superintendent of Documents. Information about on-line access to the *Federal Register* may be obtained by calling (202) 512-1530 between 7 a.m. and 5 p.m. Eastern time. These notices are also published in the weekly *Customs Bulletin* described below.

### **Customs Bulletin**

The *Customs Bulletin and Decisions* ("Customs Bulletin") is a weekly publication that contains decisions, rulings, regulatory proposals, notices and other information of interest to the trade community. It also contains decisions issued by the U.S. Court of International Trade, as well as customs-related decisions of the U.S. Court of Appeals for the Federal Circuit. Each year, the Government Printing Office publishes bound volumes of the *Customs Bulletin*. Subscriptions may be purchased from the Superintendent of Documents at the address and phone number listed above.

## Importing Into the United States

This publication provides an overview of the importing process and contains general information about import requirements. The February 2002 edition of *Importing Into the United States* contains much new and revised material brought about pursuant to the Customs Modernization Act ("Mod Act"). The Mod Act has fundamentally altered the relationship between importers and U.S. Customs and Border Protection by shifting to the importer the legal responsibility for declaring the value, classification, and rate of duty applicable to entered merchandise.

The February 2002 edition contains a section entitled "Informed Compliance." A key component of informed compliance is the shared responsibility between U.S. Customs and Border Protection and the import community, wherein CBP communicates its requirements to the importer, and the importer, in turn, uses reasonable care to assure that CBP is provided accurate and timely data pertaining to his or her importation.

Single copies may be obtained from local offices of U.S. Customs and Border Protection, or from the Office of Public Affairs, U.S. Customs and Border Protection, 1300 Pennsylvania Avenue NW, Washington, DC 20229. An on-line version is available at the CBP web site. *Importing Into the United States* is also available for sale, in single copies or bulk orders, from the Superintendent of Documents by calling (202) 512-1800, or by mail from the Superintendent of Documents, Government Printing Office, P.O. Box 371954, Pittsburgh, PA 15250-7054.

## Informed Compliance Publications

U.S. Customs and Border Protection has prepared a number of Informed Compliance publications in the "*What Every Member of the Trade Community Should Know About...*" series. Check the Internet web site <http://www.cbp.gov> for current publications.

## Value Publications

*Customs Valuation under the Trade Agreements Act of 1979* is a 96-page book containing a detailed narrative description of the customs valuation system, the customs valuation title of the Trade Agreements Act (§402 of the Tariff Act of 1930, as amended by the Trade Agreements Act of 1979 (19 U.S.C. §1401a)), the Statement of Administrative Action which was sent to the U.S. Congress in conjunction with the TAA, regulations (19 C.F.R. §§152.000-152.108) implementing the valuation system (a few sections of the regulations have been amended subsequent to the publication of the book) and questions and answers concerning the valuation system. A copy may be obtained from U.S. Customs and Border Protection, Office of Regulations and Rulings, Value Branch, 1300 Pennsylvania Avenue, NW, Washington, D.C. 20229.

*Customs Valuation Encyclopedia* (with updates) is comprised of relevant statutory provisions, CBP Regulations implementing the statute, portions of the Customs Valuation Code, judicial precedent, and administrative rulings involving application of valuation law. A copy may be purchased for a nominal charge from the Superintendent of Documents, Government Printing Office, P.O. Box 371954, Pittsburgh, PA 15250-7054. This publication is also available on the Internet web site of U.S. Customs and Border Protection.

The information provided in this publication is for general information purposes only. Recognizing that many complicated factors may be involved in customs issues, an importer may wish to obtain a ruling under CBP Regulations, 19 C.F.R. Part 177, or obtain advice from an expert (such as a licensed Customs Broker, attorney or consultant) who specializes in customs matters. Reliance solely on the general information in this pamphlet may not be considered reasonable care.

Additional information may also be obtained from U.S. Customs and Border Protection ports of entry. Please consult your telephone directory for an office near you. The listing will be found under U.S. Government, Department of Homeland Security.

## **“Your Comments are Important”**

The Small Business and Regulatory Enforcement Ombudsman and 10 regional Fairness Boards were established to receive comments from small businesses about Federal agency enforcement activities and rate each agency’s responsiveness to small business. If you wish to comment on the enforcement actions of U.S. Customs and Border Protection, call 1-888-REG-FAIR (1-888-734-3247).

**REPORT SMUGGLING 1-800-BE-ALERT OR 1-800-NO-DROGA**



**Visit our Internet web site: <http://www.cbp.gov>**